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**OPERATION "OVERLORD"
Plans and Preparations to 5 June 1944**

**Type of operation described:
A LARGE SCALE AMPHIBIOUS INVASION**

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OPERATION "OVERLORD"

Plans and Preparations to 5 June 1944

INTRODUCTION

It has been said that memory is fleet

After World War I and the Armistice, Germany was kept in the role of a subdued, conquered nation. The bonds were released gradually and Germany was allowed to grow and again become a first class nation. Under the prodding and guidance of Hitler who came into power in 1933, Germany began to conquer and undermine the small neighboring countries, one by one. Finally, in 1939, Germany reached such a position of strength and power that she was strong enough to challenge the whole world to war. (1)

(See Map No. 1) In March, 1939, Hitler voiced his challenge to the world by invading and occupying all that remained of Czechoslovakia; in May, signed and entered into a full military alliance with Italy; and in September, invaded Poland. (2)

These successes were followed by invasions of Norway and Denmark (April, 1940). (3) Barely waiting to complete these occupations, Hitler rapidly invaded and occupied Belgium, Holland and France. This advance was completed by June, 1940, and included the dark, hopeless hours of Dunkirk (29 May - 2 June). (4)

Hitler now rested his invasion forces and made preparations for the Battle of Britain. Historians will spec-

(1) A, pp. 29-30; (2) A, pp. 35-38; (3) A, p. 42; (4) A, pp. 46-54

ulate for years to come as to why Hitler did not invade England during the summer or fall of 1940. He did make elaborate preparations and subjected England to a desperate aerial bombardment intending to destroy its will to fight and to force its surrender. He failed in both missions. (5)

During the Battle of Britain, the Germans turned their eyes to the Balkan countries. Hungary, Rumania and Bulgaria were joined into the axis without a battle (November, 1940 - March, 1941) and Yugoslavia and Greece were crushed for daring to stand in the way of the Axis aggression (April, 1941). In May, 1941, Germany occupied Crete. (6)

Still not satisfied, Hitler invaded Russia in June, 1941; and continued across that country to Stalingrad before he was stopped (August, 1942). (7) During this same period, Axis forces were pushing a campaign along the northern shores of Africa intending to invade the Middle East, but were stopped at El Alamein by the British forces (July, 1942).

When the Axis forces were stopped at Stalingrad and Egypt, the tide of battle changed. The Allies began their offensive action.

(See Map No. 2) The beginning of the Allied offensive was formed in October and November, 1942, in Africa. British troops broke the stalemate at El Alamein and won a decisive victory over Rommel's forces. At the same time, an Allied invasion force was making an almost unopposed landing in North Africa. All Axis forces were compelled to cease hostilities in Africa in June, 1943. This gave the

(5) A, pp. 55-60; (6) A, pp. 68-80; (7) A, p. 162

Allies greater control of the Mediterranean, saved the Middle East and liberated Africa from Axis control. (8)

An Allied offensive also took form in Russia during the African campaign. After smashing and battering at Stalin-grad for over two months, the German armies were forced to withdraw by the stubborn, determined Russian offensive in November, 1942. This withdrawal constituted a decisive defeat for the German forces. (9)

On 9-11 July, 1943, American and British forces again took the initiative and invaded Sicily, another Axis-held position. All enemy forces on Sicily withdrew into Italy 7-16 August, 1943, only 38 days after the invasion. Shortly thereafter (3 September, 1943), the Fascist government of Italy surrendered unconditionally. (10) On the same date, the Allies invaded the toe of the Italian peninsula and started a move toward Northern Italy. The Allies battled furiously with the German forces for every inch they gained as they moved slowly up the Italian boot. They were halted by the Germans at Anzio and Cassino (March, 1944). The American and British forces lacked men and ships to continue the advance. (11)

By the spring of 1944, the Russian army had pushed the German forces from Russian soil back into Poland and Rumania. (12)

This brief outline of the action during the first four years of World War II refreshes the memory and presents the situation as it was in the spring of 1944. On 6 June, 1944, the Allies crossed the English Channel and invaded France.

(8) A, pp. 180-192; (9) A, pp. 192-193; (10) A, pp. 214-217; (11) A, pp. 220-229; (12) A, p. 257.

This monograph covers this cross-Channel invasion, Operation OVERLORD, Plans and Preparations to 6 June, 1944.

THE CONCEPTION OF OPERATION OVERLORD

Before entering into the discussion of Operation OVERLORD, it is well to go again into the early years of World War II to determine how and when this operation was conceived.

During the first Anglo-American conference in Washington (December, 1941), President Roosevelt and Prime Minister Churchill agreed upon unification of the war effort of the United States and Great Britain, and upon a trans-Channel invasion into Europe at some future date. It was also decided that the defeat of Germany held priority over the defeat of Japan. (13)

Probably the most important result of this conference was the agreement to develop a method for the control and strategical command of the American and British war potential. This agreement resulted in the prompt development of a procedure for gaining unity of Allied war effort through the Combined Chiefs of Staff acting under the direction of the leaders of the United States and Great Britain. The Combined Chiefs of Staff was composed of the American Joint Chiefs of Staff, (the Chief of Staff to the President, the Chief of Staff of the United States Army, the Commander-in-Chief of the United States Fleet and Chief of Naval Operation, and the Commanding General United States Air Forces) and four representatives of the British Chiefs of Staff.

(13) C, p. 53.

The Combined Chiefs of Staff, acting under the direction of the leaders of their respective countries, directed all Allied military operations and aided them in designating supreme commanders for these operations. The procedure, thus developed, provided that a designated supreme commander had the same command responsibilities for his combined forces as he would have had if all his forces were of one country or service, and was directly responsible to the Combined Chiefs of Staff. This procedure for Allied unity was responsible, to a large degree, for the success of the Allied operations during the balance of World War II. (14)

In April, 1942, General Marshall was directed by President Roosevelt to proceed to London to confer with Mr. Churchill about a plan for the invasion of Europe across the English Channel. At that time, Russia was being assaulted by the German forces and was falling back under the Nazi power. Stalin was voicing an appeal for a second front as soon as possible in order to divert some of the German forces attacking his country. It was decided, in response to this plea, that an emergency diversionary assault, code name SLEDGEHAMMER, would be made on the French coast in 1942; and that an all-out assault, code name ROUNDUP, also on the French coast, would be set tentatively for the summer of 1943.

In June, 1942, Mr. Churchill again met with President Roosevelt and the Combined Chiefs of Staff in Washington to further discuss Operations SLEDGEHAMMER and ROUNDUP. Little was accomplished on these two plans. While the conference

(14) C, p. 53, p. 117.

was in progress, Rommel made his advance to El Alamein (See Map No. 1) and the entire discussion turned to ways and means of stopping the German advance into the Middle East. (15)

A month later, General Marshall returned to London and it was decided that the shortage of personnel and equipment, particularly of landing craft; and the advanced season ruled out the possibility of a cross-Channel invasion in 1942. Operation SLEDGEHAMMER was discarded.

Further discussion brought out that an invasion of North Africa was the only operation practicable during 1942. While this operation would not answer the Russian's request for a second front, it would hold some German forces in Africa and also would tend to improve materially the critical Middle East situation.

This operation, code name TORCH, would take nearly all available resources and would prevent the build-up for the planned Operation ROUNDUP against Europe in 1943. In spite of this, Operation TORCH was ordered in August, 1942. Operation ROUNDUP followed Operation SLEDGEHAMMER into discard. (16)

It might be brought out here that the Allies feared that the German offensives in Africa and at Stalingrad constituted a gigantic pincers aimed at the Middle East and a possible joining with the Japanese in India. (See Map No. 2) It appeared that the only way to prevent this was the North African invasion and the defeat of Rommel's forces in that area. (It was determined later that Hitler's plans did include the joining of the two salients in the Middle East and that this

(15) D, p. 154; (16) D, p. 155.

was prevented by the Russian's heroic stand at Stalingrad and by the crushing defeat delivered upon Rommel at El Alamein.) (17)

After the operation in North Africa was well under way, President Roosevelt and Mr. Churchill, with their Combined Chiefs of Staff, met in Casablanca (January, 1943) to discuss the development of further operations after the completion of the Tunisian campaign. The preference voiced was for an operation against Germany in Western Europe or Southern France, but it was felt that resources available would not permit such an operation during 1943. Instead, still postponing the invasion on France, an invasion against Sicily was ordered for 1943. However, a joint Anglo-American Staff was organized to prepare a tentative plan for a cross-Channel operation. This staff was placed under the leadership of the Chief of Staff to the Supreme Allied Commander (designate). This organization immediately became known as "COSSAC". (18)

Before the Sicilian assault actually took place, President Roosevelt and Mr. Churchill and the Combined Chiefs of Staff met at the TRIDENT Conference in Washington (May, 1943). It was here that the Allies decided to press the Mediterranean campaign to a point where Italy would be forced to capitulate. Also, the assault on Europe from Great Britain was re-affirmed. For planning purposes, the spring of 1944 was set as the target date for the invasion. Mr. Churchill bestowed the code name, Operation OVERLORD, upon this planned invasion of France. This replaced the discarded

(17) D, p. 154; B, p. 2; (18) B, p. 3.

Operation ROUNDUP. (19)

The Quebec or QUADRANT Conference was convened in August, 1943. At this time "COSSAC" presented a tentative plan of the cross-Channel invasion for the consideration of the Allied leaders and staff. This plan was approved. (20)

During November and December, 1943, the SEXTANT Conference was held in Cairo with President Roosevelt and Mr. Churchill and the Combined Chiefs of Staff attending and was concluded at Teheran with Marshal Stalin. At this conference General Dwight D. Eisenhower was designated Supreme Allied Commander for Operation OVERLORD; Admiral Sir Bertram Ramsey, Commander-in-Chief of the Allied Naval Expeditionary Force; and Air Chief Marshal Sir Trafford Leigh-Mallory, Commander-in-Chief of the Allied Expeditionary Air Force. Air Chief Marshal Sir Arthur Tedder was later designated Deputy Supreme Commander; and Field Marshal (then General) Sir Bernard L. Montgomery was designated Commander-in-Chief, Allied Expeditionary Land Forces. (Field Marshal Montgomery's appointment was for the period during the preparation and training for the assault and early battles in France.) Lt. Gen. (then Maj. Gen.) Walter B. Smith was designated as Chief of Staff to General Eisenhower; and General (then Lt. Gen.) Omar N. Bradley was designated as Commander, United States First Army.

The target date for the invasion was set as 1 May, 1944.

(19) D, pp. 157-158; (20) B, p. 4.

THE COSSAC PLAN FOR OPERATION OVERLORD

As has been indicated before, in August, 1943, COSSAC presented a tentative plan for Operation OVERLORD to the Allied commanders. This plan specified an invasion upon Europe with three assault divisions and two follow-up divisions. Airborne support, consisting of two-thirds of one division and a build-up of nine divisions by D plus 5, also was planned. Additional build-up would be at the rate of one division per day, if weather permitted. (21)

In order to choose landing beaches appropriate for the assault operation, COSSAC had to take into consideration the following factors:

1. The range of fighter aircraft cover from bases in England must be taken into account.
2. Suitable dock facilities for build-up of troops and supplies must be in or near the assault area.
3. A sheltered coastline was desirable.
4. Suitable terrain for construction of air fields must be available.
5. The strength of German coastal defenses must be considered.
6. Beaches selected must be suitable for combined operations.

With the above factors in mind, the COSSAC planners determined that the coastline between Flushing and Cherbourg was the only area that could be given adequate fighter aircraft cover. (See Map No. 3) Within this area, the beaches

(21) B, p. 9.

most suitable for combined operations were, first, the Pas de Calais area, between Gravelines and the Somme River; and, second, in the Baie de la Seine, between the Orne River and the Cotentin Peninsula.

The Pas de Calais area was closer to Great Britain and would provide for a maximum of air cover and quicker turn-around for shipping. However, these beaches were very strong in enemy defenses.

In comparison, the Baie de la Seine beaches were lightly defended and provided a sheltered coastline; the Ports of Cherbourg and Le Havre answered the need for nearby harbor facilities; and the hinterland fulfilled the need for terrain suitable for air field construction.

COSSAC chose as the assault area the stretch of beach between Grandcamp and Caen, in the Baie de la Seine area of the French coast. This sector was given the code name, NEPTUNE. (22)

The COSSAC plan also recommended a management chart for the operation. This chart was accepted by the Allied leaders and resulted in the designations of the Supreme Allied Commander and his Commanders-in-Chief as has previously been discussed. (See Chart No. 1) This management chart provided for an American Supreme Commander, Allied Expeditionary Forces; and British Commanders-in-Chief of Naval Forces and Air Forces. It did not provide for a Commander-in-Chief of Land Forces. Under this plan, each nation would have its commander over her own ground forces.

After General Eisenhower and his staff studied the COSSAC

(22) B, p. 7

plan, their reaction was that the assault area was too restricted to exploit initial beachhead successes and that the weight of the assault force and the airborne support was too small. Also they felt that, initially, the Allied land forces should be under one commander to facilitate training and planning prior to the assault; and for co-ordination during the assault and early battles.

Immediately, General Eisenhower recommended to the Combined Chiefs of Staff that:

1. The width of the assault area be increased to include the Orne River on the east and Varreville on the west. (See Map No. 4)

2. The size of the assault be increased to five divisions and the airborne support be increased to two, and if possible, three divisions.

3. A Commander-in-Chief, Allied Expeditionary Land Forces be designated. (23)

The first two recommendations received objections. Coincidentally, the greater part of these objections was founded upon an operation General Eisenhower had planned while still Supreme Commander in the Mediterranean Theater. This was Operation ANVIL, an assault against Southern France. As Mediterranean commander, he had planned and fought to get landing craft and shipping away from Operation OVERLORD to mount his assault from the Mediterranean. Now he was on the other end, planning and fighting to get the landing craft and shipping allocated to OVERLORD at the expense of ANVIL. He was not in an enviable position. All his Mediterranean arguments

(23) E, p. 26

could now be used against him.

He finally suggested that Operation ANVIL be reduced to one division and held in abeyance until German weakness in Southern France justified the weaker assault. This suggestion was accepted. Operation ANVIL was postponed from 3 May, 1944 to 10 July, 1944. (Later changed to 15 August, 1944). Shipping and landing craft intended for the Mediterranean were allocated for employment in the assault from Great Britain. (24)

This allocation did not entirely solve the problem of shipping and landing craft. There still was not enough of either to mount necessary troops, supplies and materiel. This problem continued to be persistent and critical almost up to D-Day. (25)

The third recommendation was approved. Field Marshal Montgomery was appointed Commander-in-Chief, Allied Expeditionary Land Forces, and plans and preparations for Operation OVERLORD continued.

LOGISTICAL PROBLEMS

While General Eisenhower was trying to solve the problem of shipping, landing craft and airlift, the build-up of supplies and troops from America to the United Kingdom was gradually increasing.

Indirectly, the planning for the build-up of troops and supplies for Operation OVERLORD had begun in April, 1942. At that time, a joint logistical program, code name BOLERO (24) E, p. 11; (25) K, p. 347.

had been set up.

The mission of BOLERO was to move from the United States and receive in Great Britain an American Expeditionary Force which was to be organized, equipped and trained to assure its ability to carry out the following three-fold mission, co-ordinated with British forces:

1. The conduct of an air offensive against Germany in 1942;

2. The conduct of a major invasion of the European Continent in 1943 (Operation ROUNDUP); and

3. The conduct of a diversionary mission against the continent in 1942 (Operation SLEDGEHAMMER). (26)

At first, the flow of troops, supplies and equipment from America to England was small. Nearly all available shipping was being used to set up defensive positions in the Pacific where the situation was critical. During the first half of 1942, only one division was moved into the United Kingdom. (27)

In July, 1942, Operation SLEDGEHAMMER was cancelled. In August, Operation ROUNDUP was discarded, and at the same time, the BOLERO staff and service and construction forces were divided. One group moved to North Africa to support the African invasion (Operation TORCH). The others stayed in England to accomplish the remaining phase of its build-up mission: the conduct of an air offensive against Germany in 1942. (28)

The build-up of Air Force personnel, supplies, equipment and facilities continued. Airfields were constructed to base the air offensive against Germany. Depot and transpor-

(26) F, p. 85; (27) F, p. 96; (28) F, p. 97.

tation facilities were enlarged and developed. By May, 1943, there were 156,000 U. S. troops in the United Kingdom, of which 90,500 were Air Force personnel. Of the remainder, 28,000 were Ground Force troops and 37,500 were Service Force troops.

Although the invasion against the continent had been ruled impracticable for 1943, logistical and operational planning continued unabated. Early in 1943, projected plans provided for a steady increase in the flow of supplies and equipment to insure sufficient stockpiles for the impending, but not yet established, invasion of France.

Supplies and equipment included large quantities of Class IV and Class II items over and above T/BA and T/E allowances. Required transportation, ordnance and engineer items necessitated long-range procurement procedures. Projects of an operational nature were developed. In many cases, these projects were for construction programs in France and included pipelines, airfields, harbor repairs, warehouses, hospitals and railroads.

Past experience in Italy indicated the Germans would systematically destroy the ports before the Allies could capture them. The project for reconstruction of such ports included requirements for warehouses, barges, cranes, dock equipment and the necessary construction materials. In almost all cases, these supplies, equipment and materiel had to be in England prior to the invasion. (29)

In August, 1943, OVERLORD was firmly established. Before this, the equipment priority for England had been very

(29) F, p. 97.

low. Difficulty had been experienced trying to meet the theater build-up requirements. In December, 1943, the European Theater was placed at the top of the theater priorities to overcome this difficulty. At this time, it was planned that OVERLORD would continue until D plus 90. It was decided, in order to fully utilize all shipping, that any supplies, equipment or materiel needed during the OVERLORD period would be shipped as soon as it was available in U. S. ports, regardless of how its use was phased into the over-all operation. This procedure aided materially in meeting the operational requirements and in insuring that all necessary equipment and materiel were on hand in England prior to the invasion.

Early in the build-up program, it was determined that more economical use could be made of available shipping if all organizational equipment of the troop units was shipped prior to the troops' embarkation. This was called "pre-shipping". Since the majority of the combat troops for the invasion were shipped to England during the early part of 1944, this "preshipping" plan paid off with big dividends. Much valuable shipping space in the troop ships was utilized for high priority or emergency equipment, which otherwise might have remained at U. S. docks for an indefinite period.

No sooner was one problem solved than another appeared. After January, 1944, an available cargo backlog steadily increased in the United States' ports. This was partly caused by the high equipment priority, but more it was due to inadequacy of port facilities in Britain. Almost all of this back-

log was supplies and equipment not needed until the invasion was underway. To ease the load on the British ports, scheduled cargo ship sailings were reduced from 120 to 100 per month. "Commodity" and "pre-stowed" loading was initiated also. "Commodity" loading was loading a ship solidly with only one item, such as lumber, rations, ammunition or clothing. Ships thus loaded could be utilized as floating warehouses, and could be unloaded when opportunity appeared. "Pre-stowed" ships were "tailor-loaded", as specified, with food, ammunition and equipment. These ships were to be held in British harbors until needed at the invasion beaches, then moved directly to the beaches and unloaded. Both methods of loading greatly eased the burden on ports, railroads and depots. (30)

The logistical operation for OVERLORD was one of the greatest, if not the greatest, logistical operation in all military history. Plans were made and carried out to transport more than 1,600,000 troops and their equipment from the United States to Great Britain. Allied troops totaling 2,876,499 were sheltered, hospitalized and supplied. Provisions were made for 20,000,000 square feet of covered storage and shop space; 44,000 square feet of open storage and hard standing; and parking areas for 50,000 military vehicles. There was construction of 270 miles of railroad and 163 airfields. Shipment was made to Great Britain of 20,000 railroad cars and 1000 locomotives. During the year prior to D-Day, 5,530,000 measurement tons of equipment, supplies and materiel were shipped into the United Kingdom. (31)

(30) F, p. 97; (31) D, p. 156.

SPECIAL PROJECTS

Several projects have been singled out for special consideration in this section because of their importance to the planned invasion, and to point out the varied complexities encountered by the leaders of OVERLORD. These projects are Operation MULBERRY, Operation PLUTO and the DD Tank.

Hitler was quoted as saying, "If we hold the ports, we hold Europe." Intelligence information indicated that this thought was being exploited by the Germans. Fortifications and obstacles around and in the vicinity of all the major ports grew stronger every day. The enemy was steadily building the strength of the vaunted Atlantic Wall.

Planners for OVERLORD eyed these preparations with apprehension. The possibility of quick capture of a major port was becoming remote and the Germans had the added advantage of several months' time to increase their coastal defenses.

During the period between the invasion and the acquisition of a port, the Expeditionary Force would be entirely dependent upon supplies and troops that could be landed over the beaches. The sloping and shallow beaches in the invasion area would force ships to anchor four or five miles out in the bay. This, in turn, would necessitate the use of thousands of small craft to ferry supplies and troops to the beach.

With favorable weather, this type of supply operation might prove adequate. But the weather in the English Channel

was too unpredictable. If a heavy blow came in from the north, small craft would be entirely unprotected. They soon would be beached and wrecked. The supply line for the Expeditionary Force would be cut. The success of the invasion would be very dubious. This was pessimistic reasoning but it characterized the thoroughness of the COSSAC planners.

To insure ^{that} the Allied supply line would not be dependent upon the whims of the weather, Operation MULBERRY was conceived. This operation provided for the construction of two artificial harbors, each the size of the harbor at Dover, England. These harbors were to be pre-fabricated in England, towed across the Channel and installed off the invasion beaches, one in the English sector and one in the American, by D plus 14. It was estimated that between these two harbors, 12,000 tons of supplies could be delivered to the Allied force each day in spite of the weather.

Complete secrecy of Operation MULBERRY was paramount. A vital factor for its immediate success was surprise to the enemy. Hitler's plan for defense might have been drastically changed if he had learned of the project. (32)

Operation PLUTO was conceived when it became apparent that gas and oil supply to the continent would be extremely difficult. To alleviate this problem a "Pipe Line Under The Ocean", (PLUTO), was planned. This project provided for the construction of huge, covered storage tanks on the Isle of Wight. These tanks were connected by pipelines to English ports. This allowed tankers to discharge their cargo into

(32) L, pp. 89-91.

the storage tanks on the Isle of Wight. From the storage tanks a five-inch line was laid partially across the English Channel prior to D-Day. This line was to be completed to the French Coast as soon as possible after D-Day. (33)

The DD Tank was considered the secret weapon of the invasion. This tank was designed to go in with the first assault wave. It was felt that the use of armor in this manner would completely surprise the enemy. In previous amphibious operations, tanks could not be landed until a beachhead had been seized and secured.

A British designer developed the DD Tank about three years before D-Day. The principle involved was to seal a canvas screen around a tank in such a manner as to enable the tank to float. The screen was of sufficient height to enable the tank to sink into the water until it had displaced its weight, and still leave sufficient free-board to keep the water from flowing in on the tank. The screen was so placed as to allow limited mobility on land.

Upon landing, the screen could be discarded easily to leave the tank free for normal movement. Modifications to the tank were necessary to enable it to propel itself in water. The modifications gave the tank a duplex drive. Thus the name Duplex Drive or DD Tank. Three American tank battalions, the 70th, 741st and 743d were equipped with these tanks to take part in the invasion. (34)

(33) H, p. 7; (34) I, p. 42.

AIR OPERATIONS

In January, 1943, the commanders of the American and British Air Forces were directed to launch an ever-increasing air attack upon the German Army on the continent of Europe (Operation POINTBLANK). The attacks were to continue around the clock, day after day. The objective, generally, was to reduce the enemy's fighting potential; and, specifically, to reduce the enemy's capacity to oppose the Allied Forces when and where the Allies invaded the continent.

This directive might be considered the start of air preparations for Operation OVERLORD. Joint Allied air raids had been in existence since July, 1942, when six American aircraft participated with a Royal Air Force attack into Holland.

From January, 1943, the Allied air thrusts grew stronger, bolder and more damaging. The around-the-clock technique was developed. American planes took the day shift; the British the night.

Although the Allied attacks had grown stronger and more damaging, their size was still limited because of plane losses, the needs on other fronts and the shortage of adequate bases. In January, 1944, the U. S. Strategic Air Force in Europe was formed. Needs on other fronts had lessened by this time; air bases were available and the number of aircraft available was growing steadily. It appeared that the time was right to accomplish the first mission of the Strategic Air Force: To gain air superiority.

On 20 February, 1944, almost 1000 U. S. bombers under fighter escort struck at fighter plane factories in Germany. These attacks on plane factories continued through 26 February. At the end of that week, the Germans had lost 692 aircraft in the air and an undisclosed number on the ground. More important, many aircraft factories had been destroyed or damaged to such an extent that plane output was seriously impaired. The German Air Force was not ineffective, but it never recovered from that week in February, 1944.

In planning the air support for OVERLORD, it was contemplated that the Strategic Air Force would support the operation in three phases:

1. Subjugate the German Air Force and gain air superiority;
2. Reduce the enemy war potential by destroying factories and oil refineries, and by disrupting communication lines in Germany;
3. Isolate the battlefield by destroying or damaging bridges, railroad systems and roads in France and Belgium from D minus 14 to D-Day.

The original plans intended that the Strategic Air Force operate directly under the Combined Chiefs of Staff for the first two phases and come under the Supreme Commander for the last phase. Further study indicated that the third phase should begin about D minus 60. (35)

As the time approached for the air attacks in France and Belgium of the third phase, discussions and disagreements

(35) E, p. 10.

arose as to whether these attacks should be made. Great pressure was exerted upon the Supreme Commander in an effort to have him cancel this phase of the air support. Some British leaders feared that these attacks on French and Belgian soil would antagonize and alienate the people of these two countries. Estimates indicated that 80,000 French and Belgian persons would be killed during the air raids. For a time, this situation was critical. To call off the air support phase was to invite almost certain failure for the invasion. It was finally suggested that the French and Belgian people could be warned of the air raids by such means as dropping leaflets on the area to be bombed, by radio broadcasts and through the French Underground. This plan was agreed upon by all as the solution to the problem. (36)

The attacks of the Strategic and Tactical Air Forces during this preparatory period were carefully planned and phased. Every effort was made to deceive the enemy as to the location of the planned invasion. Only one-third of the planned effort was placed on targets that threatened the assault phase of the invasion. Heavy strikes were launched against other likely assault beaches. The intensity of all attacks was increased steadily.

By D-Day, the air attacks had been so successful in damaging and dis-organizing enemy communications that he was suffering from a critical shortage of locomotives and railway cars; coal stocks were nearly depleted; and 74 tunnels and bridges leading into the assault area were damaged or destroyed to such an extent as to be impassable. (37)

(36) M, p. 233; (37) E, pp. 15, 16.

TRAINING

The training for OVERLORD was, for the most part, the normal training conducted for units prior to combat. Early in 1943, training areas were set up in Great Britain in spite of the crowded conditions of the British Isles. In many cases, the British subjects were moved from the selected sites or blocked from these areas. However, the British people took these inconveniences in their stride.

Some of the assault forces participated in mock exercises to test the principles of the invasion plan. Beaches were chosen in England that were as nearly like the Baie de la Seine beaches as possible. Obstacles, mines and demolitions were placed on these beaches in the same manner as they existed on the invasion beaches. The assault forces for these exercises were moved into the concentration areas; processed through and embarked on landing craft as was indicated in the mounting plan. Convoys were then made up and moved to the assault beaches. Every detail was carried out to make the practice assaults as realistic as possible. Aircraft cover and support were provided. The beaches were bombed prior to the assault. Naval guns fired their support and the forces moved onto the beaches covered by naval gunfire and other supporting weapons. DD Tanks were tested for their role in the assault.

Some of the exercises were notable for confusion and lack of co-ordination. Others went off smoothly. Regardless of the outcome, each exercise taught new lessons.

New techniques were developed; old ones discarded. Naval crews received invaluable training in handling and landing troops on the proper objectives. New control measures were developed and adopted or discarded according to their success in the exercises.

The results of these exercises were invaluable toward insuring the success of the invasion. Many of the techniques and much of the equipment to be used in the invasion were as yet untried in combat. The mock exercises served as machines to test their value to an assault and the feasibility of their use. (38)

MOUNTING OVERLORD

Service of Supply, European Theater of Operations was charged with the responsibility for mounting OVERLORD. In September, 1943, a British exercise (HARLEQUIN) was conducted to test the procedures as outlined in "Standing Instructions for Movement Control (Combined Operation - Short Sea Voyage)." The results of this exercise were carefully studied and it was agreed that the mounting phase of OVERLORD should follow, generally, the procedures developed for HARLEQUIN. (39)

These procedures provided for carefully phased movement of the troops and equipment through prescribed areas until they reached the embarkation point and were loaded on their assigned ships or craft. In each area, certain details of co-ordination, orientation, supply and preparation

(38) K, p. 354; (39) N, p. 2.

of equipment were prescribed. In short, it was a step-by-step movement of troops from their home stations in England to the embarkation points. Each step provided specified elements necessary to prepare the troops for the invasion. The prescribed areas through which the troops moved were:

(See Chart No. 2)

1. The Concentration Area: This was an area into which units first moved on their journey to embark. Here they were sub-divided into concentration area camps. In these camps, units were provided with supplies and equipment that had been lost, damaged or consumed; residues of units scheduled for early landing were shed. Vehicles and packed equipment were waterproofed. The troops and vehicles were divided into parties which were to load on different ships and craft at different times in order to arrive at the invasion beaches at the same time.

2. The Marshalling Area: Here, since all overhead or residues had remained in the concentration area, units were no longer self-sustaining. "Hotel" accommodations were provided for all troops. All general housekeeping facilities were furnished. Emergency supplies and any missing or damaged equipment or supplies were issued. Ship and craft parties, as they were divided in the concentration area, moved into separate camps. After moving into the camps, the troops were sealed off from outside contact, for it was here that they were briefed and oriented as to the plan of attack and their duties in the attack.

3. The Embarkation Area: This area consisted of a number of embarkation points. Normally, troops and vehicles moved directly from the marshalling camps to an assigned embarkation point, where they were loaded on the proper ship or craft. Here again, the issue of any last-minute supplies or equipment was effected. (40)

The whole movement from the home station to the embarkation point was very complicated. Close co-ordination and control had to be effected at all times. Movement routes had to be pre-determined and marked. Numerous closely co-ordinated control points had to be set up on the routes. Permanently assigned personnel had to be provided and trained to operate each area and camp.

The southern coast of England was selected as the location for mounting OVERLORD. This area was broken down into concentration, marshalling and embarkation areas. Since there was an ever-present threat of German air attack, these installations had to be widely dispersed. Housing and communication facilities and parking areas had to be provided. Existing roads had to be repaired and improved; new roads constructed. Depots and other supply installations had to be built and huge quantities of supplies had to be installed in them.

(See Map No. 5) In all, nine marshalling areas were constructed and organized in Southern England. Six of these were operated completely by American personnel; two were jointly operated by British and American personnel; and one

(40) N, p. 5, p. 7.

was operated by British personnel. The total capacity of the areas was 190,000 task force personnel and 16,500 vehicles. (41)

ANGLO-AMERICAN RELATIONS

Military and political histories are filled with accounts of coalitions between governments, parties, countries and armies. Numerous are the accounts of the quarreling and ill feeling between the members of the coalition and the failures of the same coalitions to achieve their, supposedly, common goal. Napoleon waged his most successful campaigns against the European Coalition which formed in common defense against France.

The Allied coalition in World War I, while successful, was noted for its internal strife. Many veterans returning from war swore they would rather fight the French and English in the next war. Feeling ran very high among the Allies and relations had been severely strained by the end of World War I. (42)

Many Americans, looking back at past examples, were dubious of the outcome of the Anglo-American Pact in 1941. Possibly, they felt that the European War was no concern of America and, if allied with Britain, the Americans, no doubt, would get the worst end of the deal. This was a common feeling during the early part of the war. This feeling was a seed that could sprout and grow and endanger the success of the Allied effort.

(41) N, p. 5, p. 8; (42) M, p. 4.

Early in the war, agencies were formed to publish articles, issue movies and take other steps to combat this feeling in the American people and to get them wholeheartedly behind the war effort. The whole campaign was pointed at "Know Your Allies."

Anglo-American leaders early recognized this feeling in their troops. The same steps were taken for the military personnel as were taken for the civilians. Conferences, lectures, orientation talks and movies were utilized to inform the American soldier about his Allies. In England, for example, every American soldier, within 48 hours after his arrival in Great Britain, was given an indoctrination lecture on the subject: "Relations with the British." This lecture dealt mostly with the soldier's expected behavior, but it also served to acquaint the American soldier with some of the habits and customs of the English people. (43)

In spite of all the precautions, difficulties arose still in planning Operation OVERLORD. The British leaders were not wholeheartedly behind the operation in spite of their continual agreement that an invasion should be made against Northern France. Many times, this lack of enthusiasm for the operation sorely tried the patience of the American leaders and planners. Officers of both countries were given assignments elsewhere because they could not get along with officers of the other country. Many times, tempers were short and situations critical, but no serious breaches occurred.

(43) H, p. 9

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American officers quickly found that British officers had a distinct advantage over them in joint discussions and conferences. Stated briefly, this advantage consisted primarily of the British officers' superior knowledge of politics and parliamentary procedure. American officers, realizing this, found their relations with the British a little strained. Again, no serious breaches occurred. It also indicated a weakness in the training of American officers. (44)

To briefly sum up, General Eisenhower's reaction to the Anglo-American relations was as follows: "The true history of the war is the story of a unity produced on the basis of voluntary co-operation. Differences there were, differences among strong men representing strong and proud peoples, but these paled into insignificance alongside the miracle of achievement represented in the shoulder-to-shoulder march of the Allies to complete victory in the West." (45)

ENEMY SITUATION - 1 - 6 JUNE 1944

(See Map No. 6) The enemy opposing the Allied Expeditionary Force now poised in England was estimated to be about 58 divisions of the following types: 9 Panzer divisions, 1 Panzer Grenadier and 48 infantry divisions ranging from well-trained units to units that were still in the training phase. These divisions were formed into two army groups, "B" and "G". Army Group "B", formed by the Seventh and Fifteenth Armies and commanded by Field Marshal Rommel,

(44) C, p. 12; (45) M, p. 4.

was stationed in the vicinity of Normandy and Brittany and Pas de Calais and Flanders. Army Group "G", formed by the First and Nineteenth Armies, was stationed along the Bay of Biscay and the Riviera.

In the Baie de la Seine area the assaulting forces were opposed by elements of the Seventh Army. These consisted of 3 Panzer divisions, 3 infantry divisions of the standard type and 7 divisions of sub-standard coastal defense types. (46)

It was expected that by D plus 6 the enemy force would be composed of 20 divisions and by D plus 20, from 25 to 30 divisions.

Extensive coastal defenses had been constructed along Baie de la Seine beaches. These were made up of underwater obstacles of wooden ramp type, wooden posts and tetrahedrons. Some of these had mines attached to them. The beaches were also mined. Sea walls had been constructed and numerous battery positions were protected by concrete and armor. Field artillery and long range coastal artillery were emplaced in these positions.

The land behind the beaches was flooded in many areas. Likely airborne landing zones and drop zones had obstacles consisting of vertical poles and stakes. These were booby trapped in some instances. (47)

(46) B, p. 21; (47) B, pp. 23-25.

OVERLORD ASSAULT PLAN - (OPERATION NEPTUNE)

(See Map No. 7) The mission of the Allied Expeditionary Force was to assault the French coast in a sector bounded by Varreville on the right flank and by the Orne River on the left flank. This sector was on the beaches of Baie de la Seine. "The objective of the assault was to obtain a lodgment from which further offensive operation could be developed." (48)

To accomplish the mission and gain the objective, it was planned to simultaneously assault the Baie de la Seine beaches on a two-army front. The U. S. First Army on the right was to employ two divisions in the assault and the Second British Army was to employ three divisions. The U. S. First Army's right boundary was through Varreville, and left boundary just east of Port-en-Bessen. The Second British Army's left boundary was Ouistreham.

The U. S. First Army was to assault astride the Vire estuary with one regimental combat team (8 RCT - 4th Infantry Division) of VII Corps between Varreville and the estuary (UTAH BEACH); and two regimental combat teams (116 RCT - 29th Infantry Division and 16 RCT - 1st Infantry Division) of V Corps between Vierville and Colleville (OMAHA BEACH). Two Ranger battalions were to land between Grandcamp and Vierville.

The Second British Army was to assault with five brigades between Asnelles and Ouistreham (GOLD, JUNO and SWORD BEACHES).

(48) B, p. 6.

The 82d and 101st Airborne Divisions were to drop to the southeast and the west of Ste. Mere Eglise on the night of D-1/D.

The British 6 Airborne Division was to drop before H-Hour behind the beach defenses northeast of Caen.

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"The primary objective of VII Corps, commanded by Lt. Gen. (then Maj. Gen.) J. Lawton Collins, supported by the 82d and 101st Airborne Divisions, was to cut across the Cotentin Peninsula to secure against an attack from the south, and then drive north to take Cherbourg by D plus 8."

The V Corps, commanded by Lt. Gen. (then Maj. Gen.) Leonard F. Gerow, was to drive south and capture St. Lo by D plus 9.

The Second British Army objective was to take the ground south and southwest of Caen and "protect the American left flank from what was expected to be the main German counter-attack from the east."

After cleaning up the north end of the Cotentin Peninsula and capturing Cherbourg, the VII Corps, aided by other follow-up and build-up forces, was to turn south, join up with forces of the V Corps and jointly drive to Avranches by D plus 20, making a line: (See Map No. 8) Avranches--Vire--Falaise, and north to include the road net east of Caen. The British were to take Vire and Falaise by D plus 20.

By D plus 90, it was expected that the line would be along the Loire River--Nantes--Tours--Orleans, and to Paris on the south and east; and Le Havre to Paris on the north. (49)

(49) E, p. 6, p. 7.

TO THE ASSAULT

As D-Day approached, preparations for Operation NEPTUNE continued at a well-planned but frenzied pace. The Allied Air Forces were vigorously attacking targets in France. For days, the skies over France had swarmed with aircraft, dropping bomb loads and scurrying back to English bases for more and more loads. Troops numbering 2,876,499 were poised for the invasion of France. There were 17 British and Canadian divisions, 20 American divisions, one French division and one Polish division ready to face the German armies. In the United States, 41 divisions were prepared to sail to England and to the continent as rapidly as the ports could receive them. Thousands of aircraft,--fighters, bombers and transports--were ready to support the invasion. Assault troops had moved from their home stations, through the concentration areas to the embarkation points and onto the ships and crafts assigned to carry them to the assault beaches.

On 1 June, 1944, provisional D-Day had been set for 5 June. A provisional day had been set because the wind and seas in the Channel were the highest and the roughest that they had been in the past 20 years. On the morning of 4 June, the invasion was postponed for 24 hours although some units had already sailed for the invasion. These units were ordered to turn back. By 5 June, the weather improved and there was an outside chance that 6 June was going to be favorable for the operation.

At 0400, 5 June, General Eisenhower ordered the invasion for 6 June, 1944, and delivered this message to his command:

"Soldiers, Sailors and Airmen of the Allied Expeditionary Force!

"You are about to embark on the Great Crusade, toward which we have striven these many months. The eyes of the world are upon you. . . . In company with our brave Allies and brothers-in-arms on other Fronts, you will bring about the destruction of the German war machine, the elimination of Nazi tyranny over the oppressed peoples of Europe, and security for ourselves in a free world.

". . . . I have full confidence in your courage, devotion to duty and skill in battle. We will accept nothing less than full Victory!" (50)

ANALYSIS AND CRITICISM

Operation OVERLORD was one of the greatest military operations ever conceived and carried to successful completion. Many new, untried tactics and strategies were introduced into the venture. Some invasion knowledge had been gained from the assaults on North Africa, Sicily, Italy and in the Pacific. None of these provided the necessary experience in handling such a vast quantity of supplies or the large number of troops required for Operation OVERLORD.

In short, in many ways, this Operation was an innovation for military history. With this operation, the greatest amphibious force ever assembled landed in Normandy. Information from Channel operations of past history was hardly applicable in the twentieth century .

The "COSSAC" planners were presented with an unparalleled task when they were given the job of preparing the plans for OVERLORD. Credit must be given to them for the thoroughness of their planning. Examples of the details are the plans for pre-fabricated harbors and the pipeline for oil supply under the sea. The planners took into consideration almost every eventuality. They considered the weather, the enemy troop strength, the nature of the beaches, air cover, landing craft availability, materials necessary for post-invasion construction in France, and many other vital factors. Upon the thoroughness of the preparations for each of these factors depended the success of the assault.

The plan was necessarily besieged with many "ifs". This feature was criticized by many who had to carry out the plans. The "COSSAC" planners pointed out these unknown or variable factors to make their plans complete. They pointed out that proper weather conditions were vital to success. Enemy strength had to be considered. "COSSAC" planners were faced with estimating what the enemy strength might be at the time of the assault six or eight months previous to the invasion. They could not accurately do this, so they specified the maximum enemy strength against which the invasion could expect to succeed.

The planners might be criticized for setting up such a small assault force. Past experience in the Mediterranean would have dictated that the force should be much larger if it expected to succeed. I do not feel that this was entirely the fault of "COSSAC". Their original orders had specified that they prepare plans for an assault of not more than three divisions. It was felt in 1943 that landing craft and other necessary shipping would not be available for a larger force. I do blame "COSSAC" for not recognizing the futility of launching such a small force and for not recommending a sizeable increase in their plans.

It might be pointed out here that even Prime Minister Churchill insisted that the assault force was too small when he first reviewed the plans. In spite of this, the plan was accepted by the Combined Chiefs of Staff and preparations were carried out along these lines until General Eisenhower finally succeeded in having the force and assault

area increased. This resulted in wasted preparations and loss of very valuable time. I do criticize the "COSSAC" plan for this lack of aggressiveness. This factor would have seriously endangered the success of the operation had it not been changed by the Supreme Commander of OVERLORD.

The original plan also was inflexible. When the assault force and area were increased, the invasion date had to be postponed from 1 May to 6 June. This was due in part to the time needed to provide extra landing craft for the force increase, but was greatly due to the lack of aggressiveness and flexibility in the "COSSAC" plan.

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The "COSSAC" organization was set up without a leader by the Combined Chiefs of Staff. This was poor judgment. Here was an organization charged with a grave responsibility yet without a leader for guidance. General Morgan was designated as the Chief of Staff to someone who was not as yet appointed. Every move he made, every decision reached was viewed with some doubt. Would the decisions and the phases of the plan meet with the approval of a leader who might be designated at any time? This lack of a leader must have affected the whole staff at some time. The leader designated might not agree with the staff's approach to the plan; he might compel them to throw out all the groundwork and start anew. This placed a handicap on the staff and could have seriously affected the completed plan. No person does his best work under such circumstances.

The Supreme Commander for OVERLORD was not appointed until after the planning had been completed and preparations well under way. He was given the responsibility for carrying out a plan of which he knew nothing prior to his appointment. Upon his shoulders was placed the burden of the success or failure of an operation conceived by someone else. He and his subordinate leaders had to quickly read themselves into the plan. Because of the shortage of time, they had to carry out many phases of the plan with which they might not have agreed if given sufficient time to study. No doubt, much of the preparation would have gone more smoothly had the commander been in on the planning stage of the operation. At the very least, he would have been thoroughly familiar with the reasoning behind certain phases of the plan and could have completed the preparations easier.

The logistical planning and preparation for OVERLORD must be given well-earned praise. Never before has an operation required such a great volume of supplies, equipment and materiel. Transportation and procurement facilities were taxed to the limit. Very complete, far-reaching and flexible plans had to be made to fulfill the necessary requirements. Many entirely new items of supply and equipment had to be procured. Methods of loading and shipping had to be devised to insure that the maximum use was made of all types of transportation and of dock, harbor and storage facilities.

"Preshipping" of organizational equipment was conceived in order that valuable shipping space would be available for highly critical items needed just prior to the invasion. "Prestowing" and "tailor loading" methods were inaugurated to permit maximum use of dock facilities in England and still insure that all supplies and equipment necessary for the invasion were in England prior to the invasion.

Housing, hospitalization, transportation and food had to be provided for hundreds of thousands of troops. Airfields, railroads and highways had to be constructed. Storage and parking areas had to be provided. The logisticians had a never-ending, complex task to perform. Without thorough, flexible and aggressive plans, their preparations could never have been completed in the time allotted.

The training of the troops for OVERLORD was not all that could be desired. This was due mainly to the lack of favorable training areas and to the lack of time. Suitable training areas were scarce in England. Only a limited number of troops could participate in practice exercises.

It must be pointed out that the training maneuvers conducted were invaluable to the success of OVERLORD. New equipment and new methods were given extensive tests during these exercises. Some equipment had to be discarded and some improved. New tactics were tried and accepted, or discarded. Landing craft crews received valuable experience. Air personnel were able to determine what support was expected of them and to perfect their methods of close, continuous support. It was learned that perfect co-ordin-

ation had to exist between the Army, Navy and Air forces if maximum efficiency and results were expected.

American officers found that they were seriously hampered as members of committees and in conferences because of their lack of knowledge concerning parliamentary law and procedures. This training weakness should be corrected. All American officers should receive extensive training in parliamentary law and procedure.

Anglo-American relations were as a whole smooth and successful. This coalition between the United States and Great Britain was probably the most successful in all military or political history. This success was accomplished only through the voluntary co-operation of each nation. Differences were settled by giving and taking and mutual consideration and respect. Pride and selfish interests were made secondary to the attainment of a complete victory over the Axis powers.

LESSONS

1. Plans must be thorough, aggressive and flexible.
2. Commanders should be designated at the same time as headquarters, staffs and organizations are set up.
3. *could be better stated* Commanders and leaders should have the opportunity to participate in planning for operations for which they are to be held responsible for the success or failure.
4. *}-* The military training curriculum of all American officers should include an extensive course in parliamentary law and procedure.
5. Realistic training exercises are vital to the success of a large-scale amphibious operation.
6. Logistical planners for an overseas operation must consider transportation, harbor and dock facilities.
7. Logistical plans must include provisions for furnishing emergency supplies, equipment and materiel.
8. The maximum efficiency and success of an amphibious assault depend upon the complete co-ordination among Army, Navy and Air forces.
9. *7* A coalition can be assured success if unity of purpose is obtained through voluntary co-operation of each party or nation concerned.